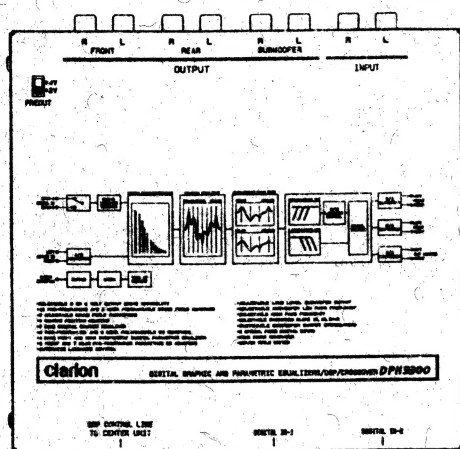


Service Manual



Digital Graphic & Parametric
Equalizers / DSP / Crossover

Model **DPH9300**

(GP-955B:North America)

(GP-955E:Europe)

SPECIFICATIONS

S/N ratio:	110dB(digital input) 94dB(analog input)
Frequency response:	10Hz to 20kHz(±1dB)
Separation:	100dB(digital input) 85dB(analog input)
Harmonic distortion:	0.004%(digital input) 0.006%(analog input)
Voltage gain:	2.5dB(Volume max;2V pre-out) 8.5dB(Volume max;4V pre-out)
Analog input:	1.5Vrms(Max.)
Digital input:	44.1kHz sampling frequency, 16-bit digital audio data
A/D conversion:	16-bit linear, 64 times over- sampling
D/A conversion:	20-bit linear, 8 times oversampling
DSP:	Basic: 12 modes User: 6 modes
Graphic equalizer:	7 bands Basic: 6 modes User: 6 modes
Parametric equalizer:	4 bands × 2 (front/rear independent) Fc: 20Hz to 20kHz 1/3 octave steps Q curve: 1 to 20 Gain: ±12dB Preset front: 6 types Preset rear: 7 types
Auto loudness:	On/off

Subwoofer:	Voltage gain: +12dB (woofer volume max.) LPF Fc: 50Hz, 80Hz, 120Hz LPF slope: 12, 18, 24dB/oct.
Front/Rear:	HPF Fc: Thru, 50Hz, 80Hz, 120Hz HPF slope: 12, 18, 24dB/oct.
Power supply voltage:	DC14.4V(10.8V to 15.6V), negative ground
Power consumption:	480mA
Dimensions(mm):	Width 178 × Height 25 × Depth 165
Weight:	0.76kg
* Specification and design are subject to change with- out notice for further improvement.	

FEATURES

1. Selectable 2 or 4 volt output drive capability
2. 12 pre-programmed/6 programmable sound field memories
3. 6 adjustable sound field parameters
4. 5 seating position memories
5. 7 band digital graphic equalizer
6. 4 band front and rear independent digital parametric equalizer
7. Automatic digital loudness control
8. Adjustable line level subwoofer output
9. Selectable subwoofer digital low pass filter
10. Selectable crossover slope 12, 18, 24dB/oct.
11. Switchable subwoofer output(Stereo/Mono)

■ COMPONENTS

GP-955B-51/GP-955E-51

Main unit	_____	1
RCA pin cord	855-8500-00	3
Parts bag	_____	1
Mounting bracket	300-7362-00	2
Lead holder	335-0833-01	3
Canoe clip	335-2515-00	4
Clip	335-3744-00	1
machine screw	714-4008-80	4

■ To engineers in charge of repair or inspection of our products.

Before repair or inspection, make sure to follow the instructions so that customers and Engineers in charge of repair or inspection can avoid suffering any risk or injury.

1. Use specified parts.

The system uses parts with special safety features against fire and voltage. Use only parts with equivalent characteristics when replacing them.

The use of unspecified parts shall be regarded as remodeling for which we shall not be liable. The onus of product liability (PL) shall not be our responsibility in cases where an accident or failure is as a result of unspecified parts being used.

2. Place the parts and wiring back in their original positions after replacement or re-wiring.

For proper circuit construction, use of insulation tubes, bonding, gaps to PWB, etc., is involved. The wiring connection and routing to the PWB are specially planned using clamps to keep away from heated and high voltage parts. Ensure that they are placed back in their original positions after repair or inspection.

If extended damage is caused due to negligence during repair, the legal responsibility shall be with the repairing company.

3. Check for safety after repair.

Check that the screws, parts and wires are put back securely in their original position after repair. Ensure for safety reasons there is no possibility of secondary problems around the repaired spots.

If extended damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.

4. Caution in removal and making wiring connection to the parts for the automobile.

Disconnect the battery terminal after turning the ignition key off. If wrong wiring connections are made with the battery connected, a short circuit and/or fire may occur. If extensive damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.

5. Cautions regarding chips.

Do not reuse removed chips even when no abnormality is observed in their appearance. Always replace them with new ones. (The chip parts include resistors, capacitors, diodes, transistors, etc). The negative pole of tantalum capacitors is highly susceptible to heat, so use special care when replacing them and check the operation afterwards.

6. Cautions in handling flexible PWB

Before working with a soldering iron, make sure that the iron tip temperature is around 270°C. Take care not to apply the iron tip repeatedly (more than three times) to the same patterns. Also take care not to apply the tip with force.

7. Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

■ FUNCTION OF THE DPH9300

The DPH9300 used digital signal processing to simulate the surround effect inside the car or to correct or change the frequency response, so that you can create a sound suited to your own tastes.

※ Adjustments are all performed on the source unit.

※ For operation, refer to the owner's guide of the source unit.

Fine adjustment of the listening position

The time required from when the sound leaves the speaker until it reaches you can be fine-adjusted to create a natural sound field, no matter what seat you are sitting in. One of five positions can be selected: FULL-SEAT, FRONT-RIGHT, FRONT-LEFT, FRONT, REAR, and POSITION PASS.

Numerous preset sound fields and sound field adjustment

Twelve basic sound fields are already stored in the memory. In addition, six other sound field setting adjusted by the user can be stored in the memory.

Adjustable sound field parameters ("DSP EDIT")

EFFECT: The percentage of the reflected sound can be adjusted.

INITIAL DLY: The sense of distance between sound source and walls can be adjusted.

ROOM SIZE: The sense of the room's dynamics can be adjusted.

LIVENESS: The sense of the room's dynamics can be adjusted.

REVERB TIME: The length of the reverberations can be adjusted.

HIGH: The percentage of the high frequencies in the reverberations can be adjusted.

PRESET sound fields (refer to Fig.1)

※ The parameters which can be adjusted differ according to the sound field category.

(♫): For reverberation type sound fields, the "ROOM SIZE" and "LIVENESS" parameters can be adjusted.

(♪): For early reflection type sound fields, the "REVERB TIME" and "HIGH" parameters cannot be adjusted.

(★): For the "BGM" (background music) sound field, only the "EFFECT" parameter can be adjusted.

Auto loudness adjustment

The amount of compression can be adjusted between 0 and 10 without changing the loudness.

Six equalizer settings

You can select the best equalizer setting for a certain type of music from among six equalizer settings. The values stored in the memory for the different equalizer settings are shown on the table Fig.2.

DSP BASIC 1

Sound field		DSP Parameter						Description
		Effect	Initial dly	Room size	Liveness	Reverb time	High	
1 HALL	Initial setting	50%	50ms			2.5s	0.5	Sound of a large concert hall.(↓)
	Adjustment range	0-100%	1-100ms			0.3-10s	0.1-1	
2 CHURCH	Initial setting	50%	95ms			9.5s	0.5	Sound of a church with a very high ceiling.(↓)
	Adjustment range	0-100%	1-100ms			0.3-10s	0.1-1	
3 STADIUM	Initial setting	50%	85ms	2.0	5			Sound of a large stadium with no ceiling or walls.(↓)
	Adjustment range	0-100%	1-100ms	0.1-4	0-10			
4 LIVEHOUSE	Initial setting	50%	20ms	2.0	5			Sound of a live performance hall, somewhat larger than a jazz club.(↓)
	Adjustment range	0-100%	1-100ms	0.1-4	0-10			
5 DISCO	Initial setting	50%	3ms	2.0	5			Sound of a disco with strong bass.(↓)
	Adjustment range	0-100%	1-100ms	0.1-4	0-10			
6 JAZZCLUB	Initial setting	50%	1ms	2.0	5			Sound of a jazz club with a low ceiling.(↓)
	Adjustment range	0-100%	1-100ms	0.1-4	0-10			

DSP BASIC 2

Sound field		DSP Parameter						Description
		Effect	Initial dly	Room size	Liveness	Reverb time	High	
1 DOME	Initial setting	50%	65ms			7.0s	0.5	Sound of an indoor sports arena.(↓)
	Adjustment range	0-100%	1-100ms			0.3-10s	0.1-1	
2 CHAMBER	Initial setting	50%	25ms			4.2s	0.5	Sound of a large hall in a palace.(↓)
	Adjustment range	0-100%	1-100ms			0.3-10s	0.1-1	
3 PARK	Initial setting	50%	100ms	2.0	5			Sound of a spacious outdoor area.(↓)
	Adjustment range	0-100%	1-100ms	0.1-4	0-10			
4 THEATER	Initial setting	50%	1ms	2.0	5			Sound of a movie or drama theater.(↓)
	Adjustment range	0-100%	1-100ms	0.1-4	0-10			
5 STUDIO	Initial setting	50%	1ms	2.0	5			Sound of a listening room in a home.(↓)
	Adjustment range	0-100%	1-100ms	0.1-4	0-10			
6 BGM	Initial setting	100%						Sound with the vocals cut.(★)
	Adjustment range	0-100%						

Fig.1

Equalizer setting	Graphic equalizer parameter(dB)							Description
	30/50Hz	100Hz	200Hz	400Hz	1kHz	3kHz	12kHz	
1 BASS BOOST	+5	+5	-4	+2	0	0	0	Low frequencies emphasized.
2 HIGH BOOST	0	0	0	-2	+4	+3	+4	Medium and high frequencies emphasized.
3 ACOUSTICAL	0	+2	+1	+4	+6	+5	+1	Medium frequencies(vocals)emphasized.
4 IMPACT	+4	+4	+3	+1	+3	+5	+5	Low and high frequencies emphasized.
5 SMOOTH	+2	+2	0	-2	-4	-4	-2	Medium and high frequencies reduced.
6 FLAT	0	0	0	0	0	0	0	The original sound.

Fig.2

Graphic equalizer adjustments

The frequency level and minimum frequency can be changed to create the desired sound. Also, six different graphic equalizer settings adjusted by the user can be stored in the memory.

Frequency level adjustment

The frequency level can be adjusted in steps of 1dB between -12dB and +12dB for all frequencies.

Minimum frequency switching

The minimum frequency for adjustment can be switched between 30Hz and 50Hz.

Parametric equalizer adjustments

Setting adjusted according to major types of cars are already stored in the preset memory, but these settings can be fine-adjusted by changing their center frequency, Q curve and frequency level.

Types of parametric equalizer adjustments

1. The position to be adjusted can be switched (off, REAR or FRONT).
2. One of six types settings for the type of car (TYPE1 to TYPE6).
3. One of seven types of settings for the rear can be selected according to the type of car (TYPE1 to

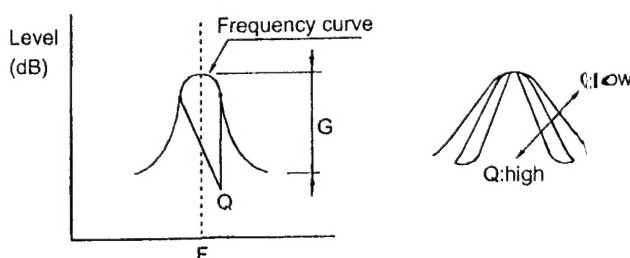
TYPE7).

4. One of four frequency bands can be selected. (BAND1 and BAND2 are for the low frequencies, BAND3 and BAND4 for the high frequencies).

5. The center frequency can be selected (20Hz to 500Hz for BAND1 and BAND2, 630Hz to 20kHz for BAND3 and BAND4).

6. The sharpness of the Q curve can be adjusted (1, 3, 5, 7, or 20).

Frequency response



Switching the pre-output voltage

The pre-output voltage can be switched between 2V and 4V to suit the connected amplifier type. (Factory setting is 2V).

Set 2V for a built-in amplifier in the source unit or an amplifier which cannot be used with 4V output.

Set 4V for an amplifier which can be used with 4V output.

Center frequency, Q curve and frequency level settings

The parametric equalizer values stored in the memory are as shown on the table Fig.3.

Center frequency, Q curve and frequency level adjustment ranges

The center frequency can be adjusted in 31 steps between 20Hz and 20kHz.

The Q curve can be set to 1,3,5,7 or 20.

The frequency level can be adjusted in steps of 1dB between -12dB and +12dB for all frequencies.

Subwoofer adjustments

The following adjustments can be made when a subwoofer is connected:

1.The speaker setting can be switched between "OFF", "MONO" and "STEREO".

2.The subwoofer's volume can be set. (0 to 14; initial setting -8)

3.The low-pass filter frequency can be set to 50Hz, 80Hz or 120Hz.

4.The low-pass filter slope can be set to 12dB/oct., 18dB/oct., or 24dB/oct.

High pass adjustments

The front and rear high pass bands can be adjusted.

1.The high-pass filter frequency can be set to one of four settings: Through, 50Hz, 80Hz or 120Hz.

2.The high-pass filter slope can be set to one of three settings: 12dB/oct., 18dB/oct., or 24dB/oct.

Test-tone output

Test tones can be output from the speakers in the following order to check the speaker connections: FRONT-LEFT→FRONT-RIGHT→REAR-LEFT→REAR-RIGHT→WOOFER-LEFT→WOOFER-RIGHT→ALL→OFF

Pink noise output

Pink noise (adjustment tones) can be output in the following order to check the parametric equalizer and the graphic equalizer: FRONT→REAR→ALL→off

Title input

Titles can be given to the DSP and equalizer settings you have adjusted, and these titles can be displayed.

※For directions on making the above adjustments, refer to the source unit's operating instructions.

	TYPE No.	Type Vehicle type and conditions		Item	Parameter			
					BAND 1	BAND 2	BAND 3	BAND 4
F R O N T	TYPE 1	Unspecified	Using speakers with separate type tweeters	Frequency(Hz)	80	250	2k	5k
				Q curve	5	3	1	1
				Gain(dB)	0	-8	-4	-4
	TYPE 2	Sedan or hatchback	Using full-range or coaxial speakers	Frequency(Hz)	100	250	800	8k
				Q curve	3	7	3	1
				Gain(dB)	3	-10	-4	-5
	TYPE 3	Wagon (station wagon)		Frequency(Hz)	125	400	1.25k	8k
				Q curve	5	7	7	3
				Gain(dB)	5	-10	-8	-2
	TYPE 4	Wagon (jeep type)		Frequency(Hz)	125	315	630	5k
				Q curve	5	7	7	3
				Gain(dB)	-2	-4	6	2
	TYPE 5	Van		Frequency(Hz)	80	250	1.25k	20k
				Q curve	3	7	3	1
				Gain(dB)	3	-8	-4	-3
	TYPE 6	Compact car		Frequency(Hz)	80	250	2k	8k
				Q curve	5	7	1	3
				Gain(dB)	0	-8	-6	-4
R E A R	TYPE 1	Sedan	Rear speaker installed on rear parcel shell	Frequency(Hz)	80	250	1.25k	8k
				Q curve	5	3	5	5
				Gain(dB)	0	-10	0	0
	TYPE 2	Sedan	Rear speaker installed on rear door	Frequency(Hz)	80	125	1.25k	8k
				Q curve	7	5	5	5
				Gain(dB)	3	-12	0	0
	TYPE 3	Wagon		Frequency(Hz)	160	315	1.6k	8k
				Q curve	5	5	3	1
				Gain(dB)	-5	-3	-5	2
	TYPE 4	Wagon or hatchback	Rear speaker installed on rear parcel shell	Frequency(Hz)	63	250	800	8k
				Q curve	5	5	1	7
				Gain(dB)	5	0	-8	-8
	TYPE 5	Wagon or van	rear speaker installed next to third seat or luggage space	Frequency(Hz)	80	250	800	8k
				Q curve	5	3	1	5
				Gain(dB)	0	-8	-3	0
	TYPE 6	Van	rear speaker installed on rear pillar (rear corner)	Frequency(Hz)	80	250	1k	6.3k
				Q curve	5	5	3	3
				Gain(dB)	0	0	-6	-5
	TYPE 7	Compact car	Rear speaker installed in rear parcel shell or rear door	Frequency(Hz)	125	250	4k	12.5k
				Q curve	7	7	3	3
				Gain(dB)	-5	-10	-5	-3

Fig.3

EXPLANATION OF IC

μPD78058GC-084-389 052-7013-11 DSP Control Microcomputer

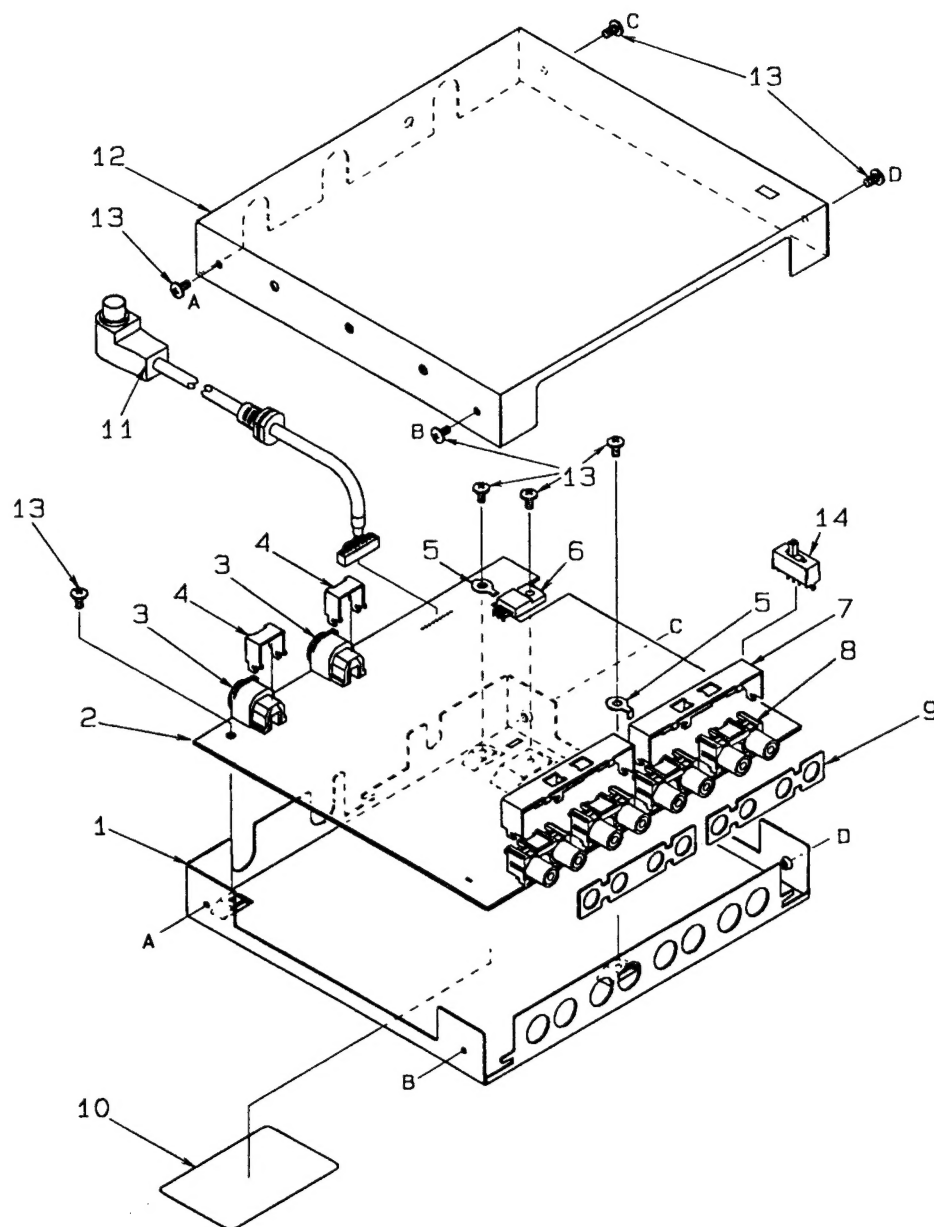
Outward Form
80 pins, plastic QFP

Terminal Description

No.	Symbol	I/O	Function																														
1	D IN SEL	O	Two-system digital input signal changeover control signal. With "H", D in 1 and, with "L", D in 2.																														
2	DE EMP	I	Terminal detecting emphasis bits of digital input signals. With "H", emphasis provided. With "L", not provided.																														
3	AD RES	O	ADC Reset signal control output terminal.																														
4	AVSS	-	Connected to GND.																														
5	NC	-	Not in use.																														
6	REQ	O	C-Bus Request Signal output terminal.																														
7	AVref1	-	Connected to +5V power source.																														
8	\overline{RX}	I	C-Bus start-stop synchronous communication receiving terminal.																														
9	\overline{TX}	O	C-Bus start-stop synchronous communication sending terminal.																														
10	TEST5	I	Digital Vol Down control pulse input terminal.																														
11	VSS	-	Ground terminal																														
12	SI 1	O	Sends data to DSP2/DSP3.																														
13	SICK 1	O	Outputs clock to DSP2/DSP3.																														
14	TEST4	I	Digital Vol Up control pulse input terminal.																														
15	TEST3	I	DSP Test Program Changeover input terminal. H: Externally mounted RAM Pass mode L: Externally mounted RAM Access mode																														
16	NC	-	Not in use.																														
17	SI 0	O	Sends data to DSP0/DSP1.																														
18	SICK 0	O	Outputs clock to DSP0/DSP1.																														
19 20 21	NC	-	Not in use.																														
22	ATT1	O	-10dB Attenuation (Analog) Control Signal output terminal. With "H", turned on. With "L", turned off.																														
23 24	P 10 P 00	O	Controls DSP0 general-purpose port (P0/P1). In Normal mode, set before DSP is reset. In Self-Diagnosis mode, output attenuation. <table><tr><td>P0</td><td>P1</td><td>DSP</td><td>P0</td><td>P1</td><td>DSP</td></tr><tr><td>H</td><td>H</td><td>Non-scramble</td><td>H</td><td>H</td><td>0dB</td></tr><tr><td>L</td><td>L</td><td>Scramble</td><td>L</td><td>H</td><td>-6dB</td></tr><tr><td></td><td></td><td></td><td>H</td><td>L</td><td>-12dB</td></tr><tr><td></td><td></td><td></td><td>L</td><td>L</td><td>0dB</td></tr></table>	P0	P1	DSP	P0	P1	DSP	H	H	Non-scramble	H	H	0dB	L	L	Scramble	L	H	-6dB				H	L	-12dB				L	L	0dB
P0	P1	DSP	P0	P1	DSP																												
H	H	Non-scramble	H	H	0dB																												
L	L	Scramble	L	H	-6dB																												
			H	L	-12dB																												
			L	L	0dB																												
25	$\overline{D RES 0}$	O	DSP0 Reset Control output.																														
26	$\overline{SRDY 0}$	O	Output made in DSP0.																														
27	$\overline{SI AK 0}$	I	Input made from DSP0.																														
28	$\overline{SI RQ 0}$	O	Output made in DSP0.																														
29 30	P 11 P 01	O	Controls DSP1 general-purpose port (P0/P1). (Refer to Pins 23/24.)																														
31	$\overline{D RES 1}$	O	DSP1 Reset Control output.																														
32	$\overline{SRDY 1}$	O	Output made in DSP1.																														
33	VSS	-	Ground terminal																														
34	$\overline{SI AK 1}$	I	Input made from DSP1.																														
35	$\overline{SI RQ 1}$	O	Output made in DSP1.																														
36 37	P 12 P 02	O	Controls DSP2 general-purpose port (P0/P1). (Refer to Pins 23/24.)																														
38	$\overline{D RES 2}$	O	DSP2 Reset Control output.																														
39	$\overline{SRDY 2}$	O	Output made in DSP2.																														
40	$\overline{SI AK 2}$	I	Input made from DSP2.																														
41	$\overline{SI RQ 2}$	O	Output made in DSP2.																														

No.	Symbol	I/O	Function
42 43	P 13 P 03	O	Controls DSP3 general-purpose port (P0/P1). (Refer to Pins 23/24.)
44	$\overline{D RES 3}$	O	DSP3 Reset Control output.
45	$\overline{SRDY 3}$	O	Output made in DSP3.
46	$\overline{SI AK 3}$	I	Input made from DSP3.
47	$\overline{SI RQ 3}$	O	Output made in DSP3.
48	MUTE	O	Analog Mute Control Signal output terminal.
49	AD SEL	O	Detects input of analog/digital signals and controls valid/invalid of Mute control by (DIR LOCK) DIR ERR. In Analog input: invalid: H In Digital input: Invalid: L
50	$\overline{DF RES}$	O	Outputs Reset signals of digital filter.
51	TEST 1	I	Test mode changeover terminal. With "H", Normal mode. With "L", Test mode.
52	ATT 2	O	Outputs -6dB attenuation (analog) control signals. With "H", turned on. With "L", turned off.
53	\overline{MLE}	O	SM5840 Vol Data I/F Latch Enable terminal.
54	MCK	O	SM5840 Vol Data I/F Clock terminal.
55	MDT	O	SM5840 Vol Data I/F Data terminal.
56	DO	I	Terminal to input data from E ² PROM.
57	DI	O	Terminal to output data into E ² PROM.
58	SK	O	Terminal to output clock into E ² PROM.
59	CS	O	Terminal to output Chip Select into E ² PROM.
60	\overline{RESET}	I	Microcomputer Reset input terminal.
61	NC	-	Not in use.
62	DIR LOCK	I	DIR IC Lock detecting terminal.
63	$\overline{+B REM}$	I	Power ON signal detecting terminal.
64	MUTE INH	O	Controls valid/invalid of Direct Mute from Head Unit. With "H", invalid. With "L", valid.
65	MUTE IN	I	Terminal for detecting Direct Mute from Head Unit. With "H", Mute OFF. With "L", Mute ON.
66 67	NC	-	Not in use.
68	VDD	-	+5V power supply terminal.
69 70	X 2 X 1	- I	Crystal oscillator connection terminal. (4.915MHz)
71	NC	-	Not in use.
72 73	XT 2 XT 1	- I	Sub-system clock oscillator connection terminal.
74	AVDD	-	Connected to +5V power source.
75	AVref 0	-	Connected to GND.
76 77	NC	-	Not in use.
78	P ON 1	O	+5V power supply control signal output terminal for E ² PROM IC, C-BUS, and Buffer. With "H", turned on. With "L", turned off.
79	P ON 2	O	+5V power supply control output terminal for digital IC. With "H", turned on. With "L", turned off.
80	NC	-	Not in use.

■EXPLODED VIEW



NO.	PART NO.	DESCRIPTION	Q'TY
1	311-1639-00	LOWER CASE	1
2	039-0858-00	PWB	1
3	075-0305-01	JACK	2
4	331-0278-00	CONNECT HOLDER	2
5	073-0731-01	TERMINAL	2
6	103-1266-00	TRANSISTOR (2SD1266)	1
7	331-0601-00	CONECT HOLDER	2
8	075-0336-00	JACK	4

NO.	PART NO.	DESCRIPTION	Q'TY
9	347-5143-00	RCA COVER	2
10	286-8704-00 286-8706-00	SETPLATE (GP-955B) SETPLATE (GP-955E)	1 1
11	855-8230-00	MINI-DIN CORD	1
12	310-1570-06	UPPER CASE	1
13	731-2606-80	TAPTIGHT	8
14	013-5005-00	SWITCH	1

ELECTRICAL PARTS LIST

Main PWB

Note) Several different parts of the same reference number are alternative parts.

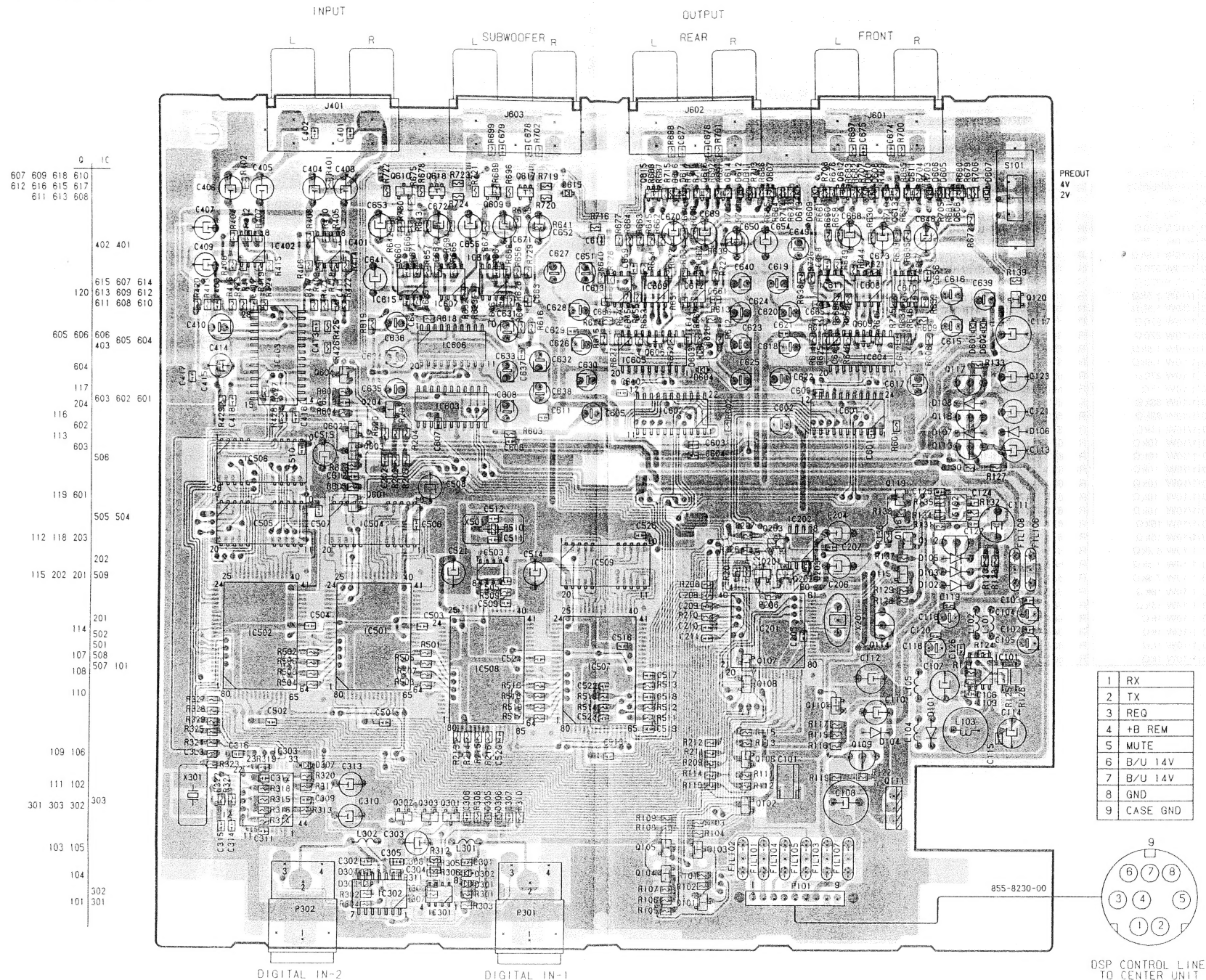
One of those parts is used in the set.

REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION
C 101	042-0522-08	16V10 μ F	C 502	178-1022-78	1000pF	C 649	042-0554-66	16V10 μ F
C 102	178-1032-78	0.01 μ F	C 503	178-1045-79	0.1 μ F	C 650	042-0555-66	16V10 μ F
C 103	178-1032-78	0.01 μ F	C 504	178-1045-79	0.1 μ F	C 651	042-0554-66	16V10 μ F
C 104	182-2263-33	16V22 μ F	C 505	178-1045-79	0.1 μ F	C 652	042-0555-66	16V10 μ F
C 105	182-1063-33	16V10 μ F	C 506	178-1045-79	0.1 μ F	C 653	042-0555-66	16V10 μ F
C 106	178-1032-78	0.01 μ F	C 507	178-1045-79	0.1 μ F	C 654	042-0555-66	16V10 μ F
C 107	184-2273-22	10V220 μ F	C 508	182-1063-32	16V10 μ F	C 655	042-0555-66	16V10 μ F
C 108	184-4773-32	16V470 μ F	C 509	176-1007-00	10pF CH	C 656	043-0264-08	1500pF
C 109	176-2211-00	220pF CH	C 510	178-1045-79	0.1 μ F	C 657	043-0264-05	220pF
C 110	182-1063-32	16V10 μ F	C 511	176-8097-00	8pF CH	C 658	043-0264-05	220pF
C 111	182-1073-32	16V100 μ F	C 512	176-8097-00	8pF CH	C 659	043-0264-05	220pF
C 112	182-1073-13	6.3V100 μ F	C 513	178-1022-78	1000pF	C 660	043-0264-10	4700pF
C 113	182-1063-32	16V10 μ F	C 514	182-1063-32	16V10 μ F	C 661	043-0264-08	1500pF
C 114	184-1073-22	10V100 μ F	C 515	182-1063-32	16V10 μ F	C 662	043-0264-05	220pF
C 115	178-1045-79	0.1 μ F	C 516	178-1045-79	0.1 μ F	C 663	043-0277-01	0.022 μ F
C 116	182-1063-33	16V10 μ F	C 517	176-1011-00	100pF CH	C 664	043-0264-10	4700pF
C 117	182-1073-32	16V100 μ F	C 518	176-1011-00	100pF CH	C 665	043-0264-08	1500pF
C 118	182-2263-33	16V22 μ F	C 519	176-1011-00	100pF CH	C 666	043-0264-08	1500pF
C 119	178-1032-78	0.01 μ F	C 520	178-1022-78	1000pF	C 667	043-0277-01	0.022 μ F
C 120	178-1032-78	0.01 μ F	C 521	182-1063-32	16V10 μ F	C 668	042-0555-66	16V10 μ F
C 121	182-1063-32	16V10 μ F	C 522	176-1011-00	100pF CH	C 669	042-0555-66	16V10 μ F
C 122	178-4732-78	0.047 μ F	C 523	176-1011-00	100pF CH	C 670	042-0555-66	16V10 μ F
C 123	182-1073-13	6.3V100 μ F	C 524	178-1045-79	0.1 μ F	C 671	042-0555-66	16V10 μ F
C 124	178-3332-78	0.033 μ F	C 525	178-1045-79	0.1 μ F	C 672	042-0555-66	16V10 μ F
C 125	178-4745-79	0.47 μ F	C 601	178-1045-79	0.1 μ F	C 673	042-0555-66	16V10 μ F
C 126	178-1032-78	0.01 μ F	C 602	042-0554-66	16V10 μ F	C 674	043-0264-02	1000pF
C 201	178-4745-79	0.47 μ F	C 603	178-1045-79	0.1 μ F	C 675	043-0264-02	1000pF
C 202	178-1045-79	0.1 μ F	C 604	178-1022-78	1000pF	C 676	043-0264-02	1000pF
C 203	178-1045-79	0.1 μ F	C 605	042-0554-66	16V10 μ F	C 677	043-0264-02	1000pF
C 204	182-1063-32	16V10 μ F	C 606	178-1045-79	0.1 μ F	C 678	043-0264-02	1000pF
C 205	178-1045-79	0.1 μ F	C 607	178-1022-78	1000pF	C 679	043-0264-02	1000pF
C 206	182-1063-32	16V10 μ F	C 608	042-0554-66	16V10 μ F	D 101	001-0501-00	D1NS4
C 207	178-1032-78	0.01 μ F	C 609	178-1045-79	0.1 μ F	D 102	001-0330-00	1SS119
C 208	176-1011-00	100pF CH	C 610	178-1045-79	0.1 μ F	D 103	001-0330-00	1SS119
C 209	176-1011-00	100pF CH	C 611	178-1045-79	0.1 μ F	D 104	001-0377-32	MA4056M
C 210	176-1011-00	100pF CH	C 612	178-1045-79	0.1 μ F	D 105	001-0503-33	HZS6B2L
C 211	176-1011-00	100pF CH	C 613	178-4745-79	0.47 μ F	D 106	001-0377-48	MA4091H
C 301	178-1045-79	0.1 μ F	C 614	176-1007-00	10pF CH	D 107	001-0377-48	MA4091H
C 302	178-1045-79	0.1 μ F	C 615	042-0554-57	6.3V47 μ F	D 108	001-0377-32	MA4056M
C 303	183-1063-32	16V10 μ F	C 616	042-0554-66	16V10 μ F	D 301	001-0516-00	MA111
C 304	178-1045-79	0.1 μ F	C 617	042-0554-57	6.3V47 μ F	D 302	001-0516-00	MA111
C 305	178-1045-79	0.1 μ F	C 618	042-0554-57	6.3V47 μ F	D 303	001-0516-00	MA111
C 306	178-3332-78	0.033 μ F	C 619	042-0554-66	16V10 μ F	D 304	001-0516-00	MA111
C 307	176-1011-00	100pF CH	C 620	042-0554-57	6.3V47 μ F	D 305	001-0516-00	MA111
C 308	176-1007-00	10pF CH	C 621	178-1045-79	0.1 μ F	D 306	001-0516-00	MA111
C 309	178-1022-78	1000pF	C 622	042-0554-66	16V10 μ F	D 307	001-0516-00	MA111
C 310	182-1063-32	16V10 μ F	C 623	042-0554-57	6.3V47 μ F	D 601	001-0516-00	MA111
C 311	178-1045-79	0.1 μ F	C 624	042-0554-66	16V10 μ F	D 602	001-0516-00	MA111
C 312	178-1032-78	0.01 μ F	C 625	042-0554-57	6.3V47 μ F	D 603	001-0516-00	MA111
C 313	182-1053-62	50V1 μ F	C 626	042-0554-57	6.3V47 μ F	D 604	001-0516-00	MA111
C 314	176-1007-00	10pF CH	C 627	042-0554-66	16V10 μ F	D 605	001-0516-00	MA111
C 315	176-1007-00	10pF CH	C 628	042-0554-57	6.3V47 μ F	D 606	001-0516-00	MA111
C 316	176-1011-00	100pF CH	C 629	178-1045-79	0.1 μ F	D 607	001-0516-00	MA111
C 401	043-0264-05	220pF	C 630	042-0554-66	16V10 μ F	D 608	001-0516-00	MA111
C 402	043-0264-05	220pF	C 631	042-0554-57	6.3V47 μ F	D 609	001-0516-00	MA111
C 403	042-0555-66	16V10 μ F	C 632	042-0554-66	16V10 μ F	D 610	001-0516-00	MA111
C 404	042-0555-66	16V10 μ F	C 633	042-0554-57	6.3V47 μ F	D 611	001-0516-00	MA111
C 405	042-0555-66	16V10 μ F	C 634	042-0554-57	6.3V47 μ F	D 612	001-0516-00	MA111
C 406	042-0555-66	16V10 μ F	C 635	042-0554-66	16V10 μ F	D 613	001-0516-00	MA111
C 407	042-0555-66	16V10 μ F	C 636	042-0554-57	6.3V47 μ F	D 614	001-0516-00	MA111
C 408	178-1045-79	0.1 μ F	C 637	178-1045-79	0.1 μ F	D 615	001-0516-00	MA111
C 409	042-0555-66	16V10 μ F	C 638	042-0554-66	16V10 μ F	D 616	001-0516-00	MA111
C 410	042-0554-58	6.3V100 μ F	C 639	042-0554-66	16V10 μ F	FIL 101	060-0264-08	1000pF EMI
C 411	043-0264-08	1500pF	C 640	042-0554-66	16V10 μ F	FIL 102	060-0264-08	1000pF EMI
C 412	043-0264-08	1500pF	C 641	042-0555-66	16V10 μ F	FIL 103	060-0264-08	1000pF EMI
C 413	178-1045-79	0.1 μ F	C 642	043-0264-06	270pF	FIL 104	060-0264-08	1000pF EMI
C 414	042-0555-66	16V10 μ F	C 643	043-0264-06	270pF	FIL 105	060-0264-08	1000pF EMI
C 415	178-1045-79	0.1 μ F	C 644	043-0264-06	270pF	FIL 106	060-0264-08	1000pF EMI
C 416	178-1022-78	1000pF	C 645	043-0264-06	270pF	FIL 107	060-0264-08	1000pF EMI
C 417	178-1022-78	1000pF	C 646	043-0264-06	270pF	FIL 108	060-0264-08	1000pF EMI
C 418	178-1045-79	0.1 μ F	C 647	043-0264-06	270pF	IC 101	051-3605-90	NJM2360AM
C 501	178-1022-78	1000pF	C 648	042-0555-66	16V10 μ F	IC 102	051-0869-55	NJM2103M

REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION
IC 201	052-7013-11	μ PD78058GC-084-3B9	Q 303	125-2031-02	MUN2211	R 215	117-4731-10	1/10W 47k Ω
IC 202	051-9402-05	AT93C56	Q 601	125-2031-02	MUN2211	R 216	117-4731-10	1/10W 47k Ω
IC 301	051-1443-06	TC7WU04F	Q 602	125-2031-02	MUN2211	R 301	117-8211-10	1/10W 820 Ω
IC 302	051-0857-35	MC74HC00AF	Q 603	125-0002-05	RN2405	R 302	117-8211-10	1/10W 820 Ω
IC 303	051-6308-00	LC8901Q	Q 604	125-0002-05	RN2405	R 303	117-4701-10	1/10W 47 Ω
IC 401	051-3014-90	NJM2115M	Q 605	125-4001-00	XN1504	R 304	117-4701-10	1/10W 47 Ω
IC 402	051-3014-90	NJM2115M	Q 606	125-4001-00	XN1504	R 305	117-4731-10	1/10W 47k Ω
IC 403	051-6309-18	AK5340B	Q 607	125-4001-00	XN1504	R 306	117-1031-10	1/10W 10k Ω
IC 501	051-6319-00	LC83015JE	Q 608	125-4001-00	XN1504	R 307	117-1031-10	1/10W 10k Ω
IC 502	051-6319-00	LC83015JE	Q 609	103-1306-00	2SD1306	R 308	117-1031-10	1/10W 10k Ω
IC 503	051-1443-06	TC7WU04F	Q 610	103-1306-00	2SD1306	R 309	117-1011-10	1/10W 100 Ω
IC 504	051-9301-05	V53C104AK-80	Q 611	125-4001-00	XN1504	R 310	117-3311-10	1/10W 330 Ω
IC 505	051-9301-05	V53C104AK-80	Q 612	125-4001-00	XN1504	R 311	117-1011-10	1/10W 100 Ω
IC 506	051-9301-05	V53C104AK-80	Q 613	125-4001-00	XN1504	R 312	117-1031-10	1/10W 10k Ω
IC 507	051-6319-00	LC83015JE	Q 614	125-4001-00	XN1504	R 313	117-3331-10	1/10W 33k Ω
IC 508	051-6319-00	LC83015JE	Q 615	125-4001-00	XN1504	R 314	117-2431-10	1/10W 24k Ω
IC 509	051-9301-05	V53C104AK-80	Q 616	125-4001-00	XN1504	R 315	117-5121-10	1/10W 5.1k Ω
IC 601	051-6310-05	SM5840DS	Q 617	125-4001-00	XN1504	R 316	117-5121-10	1/10W 5.1k Ω
IC 602	051-6310-05	SM5840DS	Q 618	125-4001-00	XN1504	R 317	117-4731-10	1/10W 47k Ω
IC 603	051-6310-05	SM5840DS	R 101	117-1031-10	1/10W 10k Ω	R 318	117-1511-10	1/10W 150 Ω
IC 604	051-1959-05	PCM67U	R 102	117-1031-10	1/10W 10k Ω	R 319	117-1841-10	1/10W 180k Ω
IC 605	051-1959-05	PCM67U	R 103	117-1031-10	1/10W 10k Ω	R 320	117-2231-10	1/10W 22k Ω
IC 606	051-1959-05	PCM67U	R 104	117-1031-10	1/10W 10k Ω	R 321	117-2011-10	1/10W 200 Ω
IC 607	051-3015-90	NJM4580M	R 105	117-5621-10	1/10W 5.6k Ω	R 322	117-2041-10	1/10W 200k Ω
IC 608	051-3015-90	NJM4580M	R 106	117-2731-10	1/10W 27k Ω	R 323	117-1011-10	1/10W 100 Ω
IC 609	051-3015-90	NJM4580M	R 107	117-1031-10	1/10W 10k Ω	R 324	117-2211-10	1/10W 220 Ω
IC 610	051-3015-90	NJM4580M	R 108	117-4731-10	1/10W 47k Ω	R 325	117-2211-10	1/10W 220 Ω
IC 611	051-3015-90	NJM4580M	R 109	117-4731-10	1/10W 47k Ω	R 326	117-1031-10	1/10W 10k Ω
IC 612	051-3015-90	NJM4580M	R 110	117-5621-10	1/10W 5.6k Ω	R 327	117-2211-10	1/10W 220 Ω
IC 613	051-3015-90	NJM4580M	R 111	117-1031-10	1/10W 10k Ω	R 328	117-2211-10	1/10W 220 Ω
IC 614	051-3015-90	NJM4580M	R 112	117-2731-10	1/10W 27k Ω	R 329	117-2211-10	1/10W 220 Ω
IC 615	051-3015-90	NJM4580M	R 113	117-1031-10	1/10W 10k Ω	R 401	117-1031-10	1/10W 10k Ω
J 401	075-0336-00		R 114	117-1031-10	1/10W 10k Ω	R 402	117-1031-10	1/10W 10k Ω
J 601	075-0336-00		R 115	117-4731-10	1/10W 47k Ω	R 403	117-3311-10	1/10W 330 Ω
J 602	075-0336-00		R 116	117-2231-10	1/10W 22k Ω	R 404	117-3311-10	1/10W 330 Ω
J 603	075-0336-00		R 117	117-3321-10	1/10W 3.3k Ω	R 405	032-0106-20	1/10W 33k Ω
L 101	010-2230-76	22 μ H	R 118	117-3321-10	1/10W 3.3k Ω	R 406	032-0106-20	1/10W 33k Ω
L 102	010-2230-73	12 μ H	R 119	117-1021-10	1/10W 1k Ω	R 407	032-0106-20	1/10W 33k Ω
L 103	010-2200-02	270 μ H	R 120	117-1021-10	1/10W 1k Ω	R 408	032-0106-20	1/10W 33k Ω
L 104	010-2230-73	12 μ H	R 121	117-2721-10	1/10W 2.7k Ω	R 409	032-0106-72	1/10W 24k Ω
L 105	010-2230-76	22 μ H	R 122	117-1021-10	1/10W 1k Ω	R 410	032-0106-72	1/10W 24k Ω
L 301	010-2230-80	47 μ H	R 123	117-1531-10	1/10W 15k Ω	R 411	032-0106-72	1/10W 24k Ω
L 302	010-2230-80	47 μ H	R 124	117-1831-10	1/10W 18k Ω	R 412	032-0106-72	1/10W 24k Ω
L 303	010-2198-56	2.2 μ H	R 125	111-1291-91	1/4WS 1.2 Ω	R 413	117-5121-10	1/10W 5.1k Ω
P 301	075-0305-01		R 126	111-1291-91	1/4WS 1.2 Ω	R 414	117-1031-10	1/10W 10k Ω
P 302	075-0305-01		R 127	117-6811-10	1/10W 680 Ω	R 415	117-1031-10	1/10W 10k Ω
Q 101	102-2412-00	2SC2412	R 128	117-2231-10	1/10W 22k Ω	R 416	117-5121-10	1/10W 5.1k Ω
Q 102	125-0024-04	MUN2113	R 129	117-2231-10	1/10W 22k Ω	R 417	117-5121-10	1/10W 5.1k Ω
Q 103	102-2412-00	2SC2412	R 130	117-6811-10	1/10W 680 Ω	R 418	117-1031-10	1/10W 10k Ω
Q 104	102-2412-00	2SC2412	R 131	117-2231-10	1/10W 22k Ω	R 419	117-1031-10	1/10W 10k Ω
Q 105	125-2031-04	MUN2213	R 132	117-2231-10	1/10W 22k Ω	R 420	117-4721-10	1/10W 4.7k Ω
Q 106	102-2412-00	2SC2412	R 133	117-4711-10	1/10W 470 Ω	R 421	117-3311-10	1/10W 330 Ω
Q 107	102-2412-00	2SC2412	R 134	117-4731-10	1/10W 47k Ω	R 422	117-3311-10	1/10W 330 Ω
Q 109	101-1240-00	2SB1240	R 135	117-6821-10	1/10W 6.8k Ω	R 423	117-3311-10	1/10W 330 Ω
Q 110	125-2031-02	MUN2211	R 136	117-1031-10	1/10W 10k Ω	R 424	117-3311-10	1/10W 330 Ω
Q 111	103-1266-00	2SD1266	R 137	117-4731-10	1/10W 47k Ω	R 425	117-5621-10	1/10W 5.6k Ω
Q 112	103-1858-00	2SD1858	R 138	117-1031-10	1/10W 10k Ω	R 426	117-1121-10	1/10W 1.1k Ω
Q 113	103-1858-00	2SD1858	R 139	117-1011-10	1/10W 100 Ω	R 427	117-1021-10	1/10W 1k Ω
Q 114	100-1015-00	2SA1015	R 201	117-4741-10	1/10W 470k Ω	R 428	117-2211-10	1/10W 220 Ω
Q 115	125-2031-04	MUN2213	R 202	117-1021-10	1/10W 1k Ω	R 429	117-1001-10	1/10W 10 Ω
Q 116	103-1858-00	2SD1858	R 203	117-1011-10	1/10W 100 Ω	R 501	117-1011-10	1/10W 100 Ω
Q 117	103-1858-00	2SD1858	R 204	117-4731-10	1/10W 47k Ω	R 502	117-1011-10	1/10W 100 Ω
Q 118	102-2412-00	2SC2412	R 205	117-1021-10	1/10W 1k Ω	R 503	117-1011-10	1/10W 100 Ω
Q 119	125-2031-02	MUN2211	R 206	117-4731-10	1/10W 47k Ω	R 504	117-1011-10	1/10W 100 Ω
Q 120	125-0002-05	RN2405	R 207	117-4731-10	1/10W 47k Ω	R 505	117-1011-10	1/10W 100 Ω
Q 201	125-2031-02	MUN2211	R 208	117-4731-10	1/10W 47k Ω	R 506	117-1011-10	1/10W 100 Ω
Q 202	125-2031-02	MUN2211	R 209	117-4731-10	1/10W 47k Ω	R 507	117-1011-10	1/10W 100 Ω
Q 203	125-2031-02	MUN2211	R 210	117-4731-10	1/10W 47k Ω	R 508	117-1011-10	1/10W 100 Ω
Q 204	100-1037-00	2SA1037	R 211	117-4731-10	1/10W 47k Ω	R 509	117-1011-10	1/10W 100 Ω
Q 301	125-2031-02	MUN2211	R 212	117-4731-10	1/10W 47k Ω	R 510	117-1051-10	1/10W 1M Ω
Q 302	125-2031-02	MUN2211	R 213	117-4731-10	1/10W 47k Ω	R 511	117-2711-10	1/10W 270 Ω
			R 214	117-4731-10	1/10W 47k Ω	R 512	117-2711-10	1/10W 270 Ω

REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION
R 513	117-2711-10	1/10W 270Ω	R 641	117-1021-10	1/10W 1kΩ	R 688	117-3011-10	1/10W 300Ω
R 514	117-2711-10	1/10W 270Ω	R 642	117-1021-10	1/10W 1kΩ	R 689	117-4731-10	1/10W 47kΩ
R 515	117-2711-10	1/10W 270Ω	R 643	117-8221-10	1/10W 8.2kΩ	R 690	117-3311-10	1/10W 330Ω
R 516	117-1011-10	1/10W 100Ω	R 644	117-1531-10	1/10W 15kΩ	R 691	117-3311-10	1/10W 330Ω
R 517	117-1011-10	1/10W 100Ω	R 645	117-1531-10	1/10W 15kΩ	R 692	117-3311-10	1/10W 330Ω
R 518	117-1011-10	1/10W 100Ω	R 646	117-1031-10	1/10W 10kΩ	R 693	117-3311-10	1/10W 330Ω
R 519	117-1011-10	1/10W 100Ω	R 647	117-1031-10	1/10W 10kΩ	R 694	117-3311-10	1/10W 330Ω
R 601	117-1011-10	1/10W 100Ω	R 648	117-1031-10	1/10W 10kΩ	R 695	117-3311-10	1/10W 330Ω
R 602	117-1011-10	1/10W 100Ω	R 649	117-7521-10	1/10W 7.5kΩ	R 696	117-6811-10	1/10W 680Ω
R 603	117-1011-10	1/10W 100Ω	R 650	117-1031-10	1/10W 10kΩ	R 697	117-2231-10	1/10W 22kΩ
R 604	117-3341-10	1/10W 330kΩ	R 651	117-1031-10	1/10W 10kΩ	R 698	117-2231-10	1/10W 22kΩ
R 605	117-3341-10	1/10W 330kΩ	R 652	117-1031-10	1/10W 10kΩ	R 699	117-2231-10	1/10W 22kΩ
R 606	117-1031-10	1/10W 10kΩ	R 653	117-1031-10	1/10W 10kΩ	R 700	117-2231-10	1/10W 22kΩ
R 607	117-1031-10	1/10W 10kΩ	R 654	117-7521-10	1/10W 7.5kΩ	R 701	117-2231-10	1/10W 22kΩ
R 608	117-2711-10	1/10W 270Ω	R 655	117-1031-10	1/10W 10kΩ	R 702	117-2231-10	1/10W 22kΩ
R 609	117-1521-10	1/10W 1.5kΩ	R 656	117-1031-10	1/10W 10kΩ	R 703	117-1031-10	1/10W 10kΩ
R 610	117-1521-10	1/10W 1.5kΩ	R 657	117-1031-10	1/10W 10kΩ	R 704	117-1031-10	1/10W 10kΩ
R 611	117-2711-10	1/10W 270Ω	R 658	117-3331-10	1/10W 33kΩ	R 705	117-1031-10	1/10W 10kΩ
R 612	117-2711-10	1/10W 270Ω	R 659	117-1031-10	1/10W 10kΩ	R 706	117-1031-10	1/10W 10kΩ
R 613	117-1521-10	1/10W 1.5kΩ	R 660	117-1531-10	1/10W 15kΩ	R 707	117-1031-10	1/10W 10kΩ
R 614	117-1521-10	1/10W 1.5kΩ	R 661	117-1021-10	1/10W 1kΩ	R 708	117-1031-10	1/10W 10kΩ
R 615	117-2711-10	1/10W 270Ω	R 662	117-3331-10	1/10W 33kΩ	R 709	117-1031-10	1/10W 10kΩ
R 616	117-2711-10	1/10W 270Ω	R 663	117-1531-10	1/10W 15kΩ	R 710	117-1031-10	1/10W 10kΩ
R 617	117-1521-10	1/10W 1.5kΩ	R 664	117-1021-10	1/10W 1kΩ	R 711	117-1031-10	1/10W 10kΩ
R 618	117-1521-10	1/10W 1.5kΩ	R 665	117-1131-10	1/10W 11kΩ	R 712	117-1031-10	1/10W 10kΩ
R 619	117-2711-10	1/10W 270Ω	R 666	117-1821-10	1/10W 1.8kΩ	R 713	117-1031-10	1/10W 10kΩ
R 620	117-1021-10	1/10W 1kΩ	R 667	117-1031-10	1/10W 10kΩ	R 714	117-1031-10	1/10W 10kΩ
R 621	117-3331-10	1/10W 33kΩ	R 668	117-1031-10	1/10W 10kΩ	R 715	117-1031-10	1/10W 10kΩ
R 622	117-3331-10	1/10W 33kΩ	R 669	117-1031-10	1/10W 10kΩ	R 716	117-1031-10	1/10W 10kΩ
R 623	117-1131-10	1/10W 11kΩ	R 670	117-1031-10	1/10W 10kΩ	R 717	117-1031-10	1/10W 10kΩ
R 624	032-0106-10	1/10W 10kΩ	R 671	117-1031-10	1/10W 10kΩ	R 718	117-1031-10	1/10W 10kΩ
R 625	032-0106-10	1/10W 10kΩ	R 672	117-1021-10	1/10W 1kΩ	R 719	117-1031-10	1/10W 10kΩ
R 626	032-0106-10	1/10W 10kΩ	R 673	117-1021-10	1/10W 1kΩ	R 720	117-1031-10	1/10W 10kΩ
R 627	032-0106-10	1/10W 10kΩ	R 674	117-1821-10	1/10W 1.8kΩ	R 721	117-1031-10	1/10W 10kΩ
R 628	032-0106-10	1/10W 10kΩ	R 675	117-4731-10	1/10W 47kΩ	R 722	117-1031-10	1/10W 10kΩ
R 629	032-0106-10	1/10W 10kΩ	R 676	117-4731-10	1/10W 47kΩ	R 723	117-1031-10	1/10W 10kΩ
R 630	117-1531-10	1/10W 15kΩ	R 677	117-4731-10	1/10W 47kΩ	R 724	117-1031-10	1/10W 10kΩ
R 631	117-1531-10	1/10W 15kΩ	R 678	117-6811-10	1/10W 680Ω	R 725	117-9121-10	1/10W 9.1kΩ
R 632	117-8221-10	1/10W 8.2kΩ	R 679	117-4731-10	1/10W 47kΩ	R 726	117-9121-10	1/10W 9.1kΩ
R 633	117-7521-10	1/10W 7.5kΩ	R 680	117-3011-10	1/10W 300Ω	R 727	117-9121-10	1/10W 9.1kΩ
R 634	117-7521-10	1/10W 7.5kΩ	R 681	117-4311-10	1/10W 430Ω	R 728	117-9121-10	1/10W 9.1kΩ
R 635	117-1531-10	1/10W 15kΩ	R 682	117-4311-10	1/10W 430Ω	R 729	117-9121-10	1/10W 9.1kΩ
R 636	117-1531-10	1/10W 15kΩ	R 683	117-3011-10	1/10W 300Ω	R 730	117-9121-10	1/10W 9.1kΩ
R 637	117-1021-10	1/10W 1kΩ	R 684	117-4731-10	1/10W 47kΩ	S 101	013-5005-00	
R 638	117-1021-10	1/10W 1kΩ	R 685	117-3011-10	1/10W 300Ω	X 201	060-0319-00	4.915MHz
R 639	117-1021-10	1/10W 1kΩ	R 686	117-4311-10	1/10W 430Ω	X 301	061-1087-50	16.9344MHz
R 640	117-1021-10	1/10W 1kΩ	R 687	117-4311-10	1/10W 430Ω	X 501	061-3034-00	24.576MHz

PRINTED WIRING BOARD



CIRCUIT DIAGRAM

Main circuit 1/2

